

Interactive comment on “Monitoring induced distributed double-couple sources using Marchenko-based virtual receivers” by Joeri Brackenhoff et al.

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We thank the reviewer for his highly positive review and his suggestion to improve this paper. We would like to address his only major comment here. To show the reviewer that the approach using the Marchenko method is an improvement over previous approaches such as back propagation and RTI, we have added the results from back propagation experiments to the paper as both snapshots and extracted traces. We have performed these experiments only for the synthetic data and not the field data, as the synthetic data clearly shows that the Marchenko approach is superior. We hope that this demonstrates to the reviewer that our approach is an improvement over the

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classical methods. Additionally, we would like to emphasize that our method is not another source localization method. We have emphasized in the text that the method is intended to forecast, in a data-driven way, the full wavefield response to possible future induced seismicity events using the two-step process and to monitor the full wavefield of actual seismicity events in the subsurface using the one-step process.

Interactive comment on Solid Earth Discuss., <https://doi.org/10.5194/se-2018-142>, 2019.

C2

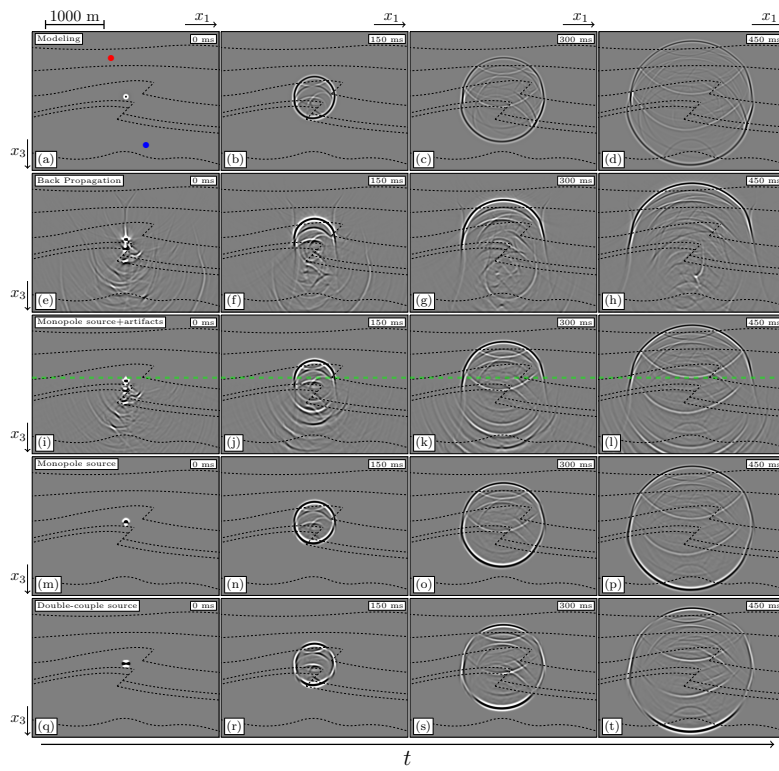


Fig. 1. Figure with the added back propagation experiment for the point sources

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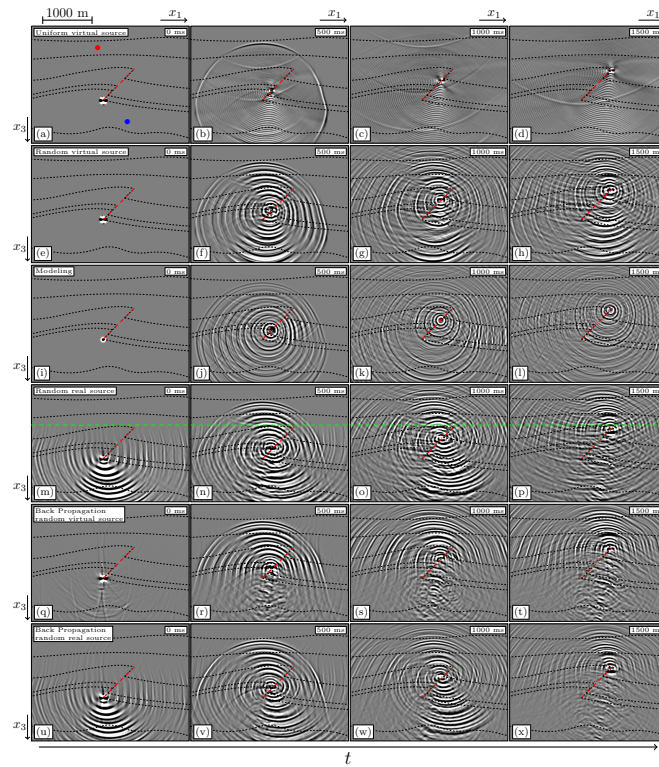


Fig. 2. Figure with the added back propagation experiment for the line sources

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